

ABSTRACT OF THE DISCLOSURE

5 A pixel cell array of a light valve does not
rely upon photolithography to define inter-pixel
spacing. Instead, adjacent pixels of the array are
electronically insulated from one another by spacers
formed by etching a dielectric layer conforming to
sidewalls of a patterned sacrificial layer. Removal
of the sacrificial layer, followed by formation of a
metal layer over the dielectric spacer structures and
10 chemical-mechanical polishing of the metal layer,
completes fabrication of the array. The thickness of
the spacer sidewalls, and hence inter-pixel spacing,
is determined by the rate of formation of the
conforming dielectric layer. This rate can be
15 precisely controlled to produce spacer structures
having a thickness of less than the minimum linewidth
of a given photolithography system. In this manner,
pixel arrays having significantly reduced inter-pixel
spacing and correspondingly higher cell densities can
20 be created. Arrays with even greater pixel densities
can be created with low-k dielectric materials used
to form the dielectric layer and the resulting spacer
structures.